

EXHIBIT 3

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

GOOGLE LLC,

Plaintiff and Counter-defendant,

v.

SONOS, INC.,

Defendant and Counter-claimant.

Case No. 3:20-cv-06754-WHA
Related to Case No. 3:21-cv-07559-WHA

**REPLY EXPERT REPORT OF
DOUGLAS C. SCHMIDT**

HIGHLY CONFIDENTIAL - SOURCE CODE - ATTORNEYS' EYES ONLY**VI. ASSERTED CLAIMS & CLAIM CONSTRUCTION**

15. As discussed in my Opening Report, I understand Sonos is currently asserting that the following claims from the '033 Patent are infringed directly and indirectly by Google. These are the claims that I have been asked to opine on.

- “Computing device” claims: 1, 2, 4, 9, 11, 16
- “Computer-readable medium” claims: 12, 13

16. I previously provided my opinions regarding claim construction of the foregoing claims, including a summary of the Court’s construction of the term “playback queue” and the Court’s rejection of Google’s proposed construction that the term “remote playback queue” is limited to a “third-party application.”

17. Specifically, I understand that the claim term “playback queue” refers to a “list of multimedia content selected for playback,” with the following characteristics:

- The playback queue is the list of media items that is used for playback;
- The playback queue contains the entire list of media items selected for playback;
- The playback queue is not being used merely to process the list of media items for playback; and
- The playback queue is the queue that “runs the show.”

18. As I noted in my Opening Report, however, the '033 Patent’s claims do not recite the term “multimedia content” like the '615 Patent’s claims do. Instead, the '033 Patent’s claims recite the term “media item.” For purposes of the '033 Patent, therefore, I will interpret the Court’s construction of “playback queue” (provided in the context of claim 13 of the '615 Patent) as “*a list of one or more media items selected for playback.*” However, my opinions would remain the same under the Court’s exact construction of “playback queue” provided in the context of claim 13 of the '615 Patent and applied verbatim by Dr. Bhattacharjee because a POSITA would understand that the term “multimedia content” is synonymous with the term “media item” in the context of the '033 and '615 Patents.

19. I also understand that Google sought leave from the Court to file supplemental claim construction briefing to enable Google to argue that the term “remote playback queue” means “a playback queue provided by a third-party application.” However, I understand that the Court recently denied Google’s request to file supplemental claim construction briefing. *See* Dkt. 432.

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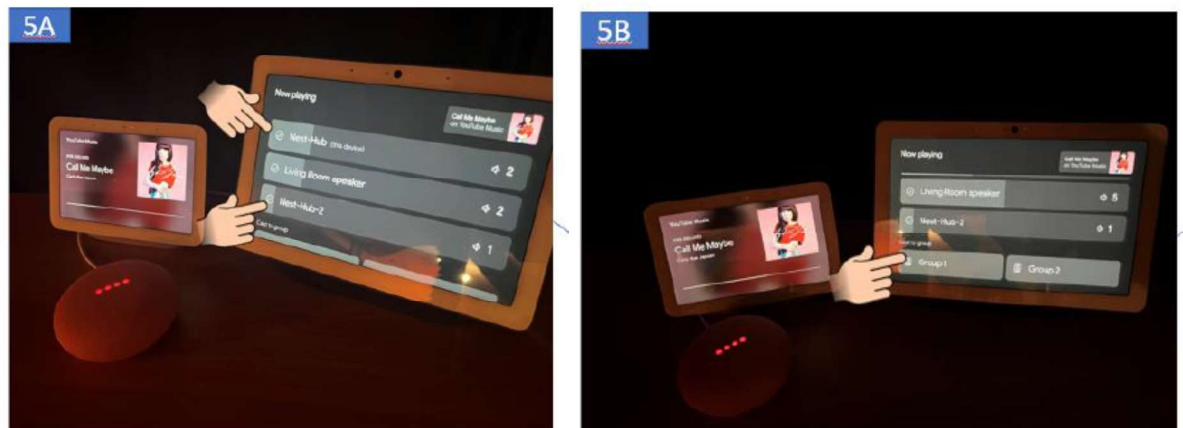
In doing so, I understand the Court has precluded Google (and Dr. Bhattacharjee) from arguing that the claimed “remote playback queue” is limited to a “third-party application.” *Id.* Thus, I understand the term “remote playback queue” should be interpreted in accordance with its plain and ordinary meaning in the context of the ’033 Patent, as I interpreted it in my Opening Report. *See* Schmidt. Op. Report, ¶¶236-41 (explaining that a “remote playback queue” is not local to the device(s) that are to playback content from the queue and that the remainder of the claim language informs a POSITA that the claimed “remote playback queue” resides in the cloud); *see also, e.g.*, Dkt. 316 [Order Granting Motion for Partial Summary Judgment as to ’615 Patent], 6 (“As detailed further below, Google’s cast technology currently manages content queues, broadly speaking, by storing such a queue on a *remote* cloud server on the internet. The parties refer to this remote queue as a cloud queue. The parties agree that the cloud queue is not a ‘local playback queue,’ as required by limitation 13.5(a) [of the ’615 Patent], because it’s stored remotely on the internet as opposed to being stored locally on the playback device.”) (Court’s emphasis).

20. Other than the above-discussed order, I understand that no other claim construction order has been issued in this case and that the parties dispute the meaning of various terms relevant to the ’033 Patent as follows:

Term	Sonos	Google
“playback device”	“data network device configured to process and output audio”	Plain and ordinary meaning
“data network”	Plain and ordinary meaning, which is “a medium that interconnects devices, enabling them to send digital data packets to and receive digital data packets from each other”	Plain and ordinary meaning
“cloud”	Plain and ordinary meaning	“over a network”
“an instruction for the at least one given playback device to take over responsibility for playback of the remote playback queue from the computing device, wherein the instruction configures the at least	Plain and ordinary meaning	Instruction means one instruction

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30. **Second**, Dr. Bhattacharjee's overview of "YouTube Music on Hub Device" addresses stream transfer to a *dynamic* group of Receivers that is entirely irrelevant to my infringement analysis. Specifically, Dr. Bhattacharjee opines that "selecting one or more of the playback devices on the display does not stop the Hub Device's playback of the media and instead adds the selected devices to form a '*dynamic*' speaker group." Bhatta. Rebuttal Report, ¶99. However, Sonos has not accused that forming a *dynamic* group using a Hub device provisioned with the YouTube Music app would satisfy any Asserted Claim of the '033 Patent. Instead, I previously explained that a Hub device provisioned with the YouTube Music app can display a representation of one or more "devices," where a "device" could correspond to a *static* "speaker group" of multiple Receivers. *See, e.g.*, Schmidt Op. Report, ¶264. This is shown in Appendix 2 of my Opening Report. *Id.*, Appendix 2, 57. As shown below, Dr. Bhattacharjee also distinguishes dynamic grouping (image 5A) and static grouping (image 5B) in his report.



See Bhatta. Rebuttal Report, ¶101. Unlike dynamic grouping, with respect to image 5B of his report, Dr. Bhattacharjee acknowledges that "[s]electing 'Group 1' thus results in ... playing back media only on the Living Room speaker device." *Id.*

31. Dr. Bhattacharjee's overview is therefore flawed for at least the foregoing reasons.

B. Dr. Bhattacharjee Failed to Apply the Same Claim Scope to "Playback Queue" For Purposes of Noninfringement and Invalidity

32. I understand that the same claim scope must be applied to noninfringement and invalidity. However, it is my opinion that Dr. Bhattacharjee did not apply the same claim scope of

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1 the term “playback queue” for purposes of noninfringement and invalidity, despite suggesting that
 2 he was applying the Court’s construction for the term “playback queue” in his Opening and
 3 Rebuttal Reports. *See* Bhatta. Op. Report, ¶84, Bhatta. Rebuttal Report, ¶27.

4 33. For instance, for purposes of invalidity, Dr. Bhattacharjee equates a “playback
 5 queue” to **any** stored list of media items (e.g., a “playlist,” such as a “Magic Playlist,” an album,
 6 etc.) in his Opening Report. *See, e.g.,* Bhatta. Op. Report, ¶¶492-95 (equating “cloud-hosted
 7 playlists” “e.g., AC/DC album” to a “remote playback queue”), ¶499 (equating “Magic Playlist” to
 8 a “remote playback queue”); *see also, e.g., id.*, ¶¶186, 220, 509-11, 526, 531, 533, 544-45. In turn,
 9 Dr. Bhattacharjee opines that **any** cloud-stored “playlist” of media items amounts to the claimed
 10 “remote playback queue.”

11 34. However, for purposes of noninfringement, Dr. Bhattacharjee opines that a
 12 “playlist” and a “playback queue” are “two distinct items.” *See, e.g.,* Bhatta. Rebuttal Report, ¶50
 13 (“A user can playback playlist by adding it to a queue.”), ¶63 (“[T]he playlist and queue are **two**
 14 **distinct items**, such that adding a song to the queue does not add it to the playlist.”), ¶70 (“Because
 15 the local playback queue and the playlist from which it was initially populated are **two distinct**
 16 **items**, changes to the local playback queue are not reflected in any playlist.”); *see also id.*, ¶61
 17 (“The entire **playlist** can be added to the **queue** or individual items can be added to the queue.”).
 18 Dr. Bhattacharjee also confirms my understanding that a “playlist” must be caused to be added to
 19 a “playback queue,” thereby designating the contents of the “playlist” **for playback**. *See, e.g., Id.*,
 20 ¶46 n.1 (“[W]hen a media item is added to a playlist it is saved for later playback. **When a user**
 21 **later selects the playlist for playback** the media items in **the playlist may be added to a queue**, and
 22 the queue is then played back. When a user selects the “Add to queue” option, the selected media
 23 item is directly added to the queue rather than a playlist”), ¶50 (“A user can playback playlist by
 24 adding it to a queue.”). In fact, Dr. Bhattacharjee opines that “a POSITA would have understood
 25 that a YouTube **playlist** on a server, standing alone, is not a ‘playback queue’ under the Court’s
 26 construction.” *Id.*, ¶172.

27 35. Dr. Bhattacharjee’s overview is therefore flawed for this additional reason.
 28

HIGHLY CONFIDENTIAL - SOURCE CODE - ATTORNEYS' EYES ONLY**C. Dr. Bhattacharjee's Opinions Contradict Google & Dr. Bhattacharjee's Representations to the Court**

36. Dr. Bhattacharjee expends a considerable amount of his effort in his overview explaining that (i) “manipulations” to the Sender’s queue is “entirely local and are not based on inputs by a cloud server, and, indeed are not reflected back to any so-called queue on a YouTube server” (Bhatta. Rebuttal Report, ¶68; *see id.*, ¶69), (ii) media items (i.e., “Autoplay items” or “service-recommended videos”) set for playback in non-casting/local playback mode may be different than those played after transitioning to casting/remote mode (*see id.*, ¶¶54, 56-57, 96), and (iii) “changes to the [Sender’s] local playback queue are not reflected in any playlist.” *Id.*, ¶70, *see also id.*, ¶¶61-64. Dr. Bhattacharjee’s opinions are flawed for various reasons.

37. **First**, Dr. Bhattacharjee’s opinions that “manipulations” to the Sender’s queue is “entirely local and are not based on inputs by a cloud server, and, indeed are not reflected back to any so-called queue on a YouTube server” (Bhatta. Rebuttal Report, ¶68; *see id.*, ¶69) and “changes to the [Sender’s] local playback queue are not reflected in any playlist” (*id.*, ¶70, *see also id.*, ¶¶61-64) are ultimately unpersuasive based on Google and Dr. Bhattacharjee’s repeated representations to the Court.

38. As discussed before, Google and Dr. Bhattacharjee repeatedly represented to the Court that the accused YouTube systems **use only** a “remote playback queue” (also referred to by Google and Dr. Bhattacharjee as a “cloud queue”). Schmidt Rebuttal Report, ¶302. Google and Dr. Bhattacharjee also repeatedly represented to the Court that the existence of a “local playback queue” in a system is **mutually exclusive** of a “remote playback queue” (or “cloud queue”) and *vice versa*. *Id.*, ¶303. Regardless, that a user can make changes at the Sender’s queue is irrelevant because ultimately the list of media items selected for playback that is provided by the YouTube cloud infrastructure runs the show for the Sender and Receiver.

39. In fact, I understand that the Court accepted Google and Dr. Bhattacharjee’s representations that a system cannot have both a “local playback queue” and a “remote playback queue”/“cloud queue” because “locally-stored information is merely a mirror reflecting a subset of what is happening in the cloud queue.” Dkt. 316, 9-10. I understand that, according to the Court, a subset of media items (such as that stored by a playback device when used with the accused

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1 YouTube apps) did not constitute a “playback queue” because they “merely provide the means to
2 *process* the lists for playback. In short, “the cloud queue runs the show.” *Id.*, 10.

3 40. **Second**, Dr. Bhattacharjee’s assertions that media items (i.e., “Autoplay items” or
4 “service-recommended videos”) set for playback in non-casting/local playback mode may be
5 different than those played after transitioning to casting/remote mode (Bhatta. Rebuttal Report,
6 ¶¶54, 56-57, 96) are also irrelevant because the *content* of the “remote playback queue” is not
7 determinative. *Infra* ¶¶170-74.

8 41. Dr. Bhattacharjee’s overview is therefore flawed for these additional reasons.

9 **D. Dr. Bhattacharjee’s Characterization of Google’s MDx Protocol Is Flawed**

10 42. Dr. Bhattacharjee discusses Google’s MDx protocol at paragraphs 75-79 of his
11 Rebuttal Report. However, virtually all of his discussion is irrelevant to his opinions regarding
12 alleged non-infringement. I also note that his discussion of the history of the MDx protocol is
13 inaccurate and incomplete, including the dates that he claims certain events or milestones occurred.
14 However, because his discussion has no bearing on his alleged non-infringement positions, I do not
15 need to address it in this Report.

16 **E. Dr. Bhattacharjee’s Overview of YouTube on a User Device**

17 43. Dr. Bhattacharjee’s purports to provide an “overview” of the accused YouTube apps
18 running on a user device. *See* Bhatta. Rebuttal Report, §IX.A. I note that Dr. Bhattacharjee’s
19 overview is incomplete and inaccurate.

20 **1. Dr. Bhattacharjee’s Overview of Playing Back Media on User Device**

21 44. To start, Dr. Bhattacharjee’s overview of playing back media on a user device via a
22 YouTube app (Bhatta. Rebuttal Report, ¶¶45-70) is incomplete and inaccurate. In this regard, Dr.
23 Bhattacharjee’s “overview” focuses primarily on what he refers to as “User Playlists.” Bhatta.
24 Rebuttal Report, ¶45 (“Using the YouTube Main and YouTube Music application on their mobile
25 devices, users may select media items (*e.g.*, videos or songs) and add them to a playlist. [Dr.
26 Bhattacharjee] will refer to these playlists as ‘UserPlaylists’ or ‘User-CreatedPlaylists.’), ¶46.

27 45. However, as I explained in my Opening Report, each YouTube app except for the
28 YouTube TV app enables a user to select a collection of media items for playback at the Sender
that the user does not create, such as service-provided playlists, albums, etc. *See, e.g.*, Schmidt Op.

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1 91. Moreover, as set forth in my Rebuttal Report, I understand that, in convincing the
2 Court to rule in its favor on both non-infringement and invalidity of claim 13 of the '615 Patent,
3 Google and Dr. Bhattacharjee made numerous, broad-sweeping characterizations regarding
4 Google's predecessor systems relative to the accused YouTube and GPM systems that directly
5 contradict Dr. Bhattacharjee's assertion that his opinion is also supported by the Court's Order
6 Granting Google's Motion for Summary Judgment for the '615 Patent. *See* Schmidt Rebuttal
7 Report, ¶¶301-302. Critically, Google conceded that the accused YouTube apps used a "remote
8 playback queue" as opposed to a "local playback queue." *Id.* I therefore disagree with Dr.
9 Bhattacharjee's opinion that the Court's Order supports his opinion regarding infringement.

10 92. **Second**, Dr. Bhattacharjee dismisses the indirect evidence I have cited in my
11 Opening Report because I "cite[d] to publications describing how to download the YouTube app
12 or Casting in general," "[b]ut there is no indication that these articles have any bearing on the
13 specific individual limitations of the '033 patent," and "these generic publications do not
14 demonstrate that Google 'knew (or should have known)' that it infringed any asserted claim of the
15 '033 patent." Bhatta. Rebuttal Report, ¶124 (citing Schmidt Op. Report, ¶¶452-459).

16 93. To start, Dr. Bhattacharjee appears to misunderstand how infringement of an
17 "apparatus" or "device" claim works. As I explained in my Opening Report, Google's
18 encouragement for users to install YouTube apps onto their computing devices results in "making"
19 an infringing device.

20 94. Moreover, Dr. Bhattacharjee genericizes the evidence I cited in my Opening Report
21 without specifically addressing each one. For instance, I have cited evidence at paragraphs 452-
22 459 of my Opening Report that includes specific instructions by Google (including video
23 instructions) on how to cast one or more YouTube apps to a Cast-enabled media player and/or add
24 media items to a queue. *See, e.g.,* Schmidt Op. Report, ¶453 (citing GOOG-SONOSWDTX-
25 00005979, SONOS-SVG2-00060341, GOOG-SONOSWDTX-00006564, GOOG-SONOSNDCA-
26 00057269, SONOS-SVG2-00060340, GOOG-SONOSWDTX-00005631). Dr. Bhattacharjee,
27 however, fails to address this specific evidence and simply characterizes it as "describing how to
28 download the YouTube app or Casting in general." I disagree with Dr. Bhattacharjee's generic

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1 evidence burden of establishing that the '033 Patent is invalid, which means my burden is less than
2 showing something is highly probable. I further understand that both my burden of establishing
3 infringement and Dr. Bhattacharjee's burden of establishing non-infringement are lower than
4 proving something beyond a reasonable doubt. Thus, in sum, I understand that, even if there is
5 reasonable doubt or less than a high probability, infringement can still be established.

6 104. Dr. Bhattacharjee ignores this and instead focuses on alleged errors in *one* type of
7 evidence that I relied upon. Even assuming *arguendo* that Dr. Bhattacharjee's critiques are
8 accurate, that does not undermine the numerous other sources of evidence that confirm that the
9 YouTube apps infringe.

10 105. Indeed, in my Opening Report, I relied on numerous sources and types of evidence
11 other than source code, including (i) sworn deposition testimony of Google's 30(b)(6) witnesses
12 and of other Google employees, (ii) Google's own representations to the Court, (iii) Dr.
13 Bhattacharjee's own representations to the Court and opinions, (iv) Google's own interrogatory
14 responses, (v) Google's own internal technical documentation and the like, (vi) Google's own and
15 third-party publicly available information, (vii) real-world testing of the operation of the YouTube
16 apps, and (viii) my own experiences and understanding of systems like the accused.

17 106. Thus, in my opinion, the totality of the evidence supports my overall opinion that
18 each YouTube Sender satisfies the claims.

19 **X. GOOGLE'S DIRECT INFRINGEMENT**

20 107. As an initial matter, I note that Dr. Bhattacharjee's Rebuttal Report is filled with
21 non-infringement arguments that I understand Google either (i) did not advance while fact
22 discovery was open in this case (I understand that fact discovery closed on November 30, 2022) or
23 (ii) advanced for the first time literally 1 day before the close of fact discovery.

24 108. In this respect, I understand that Google set forth its non-infringement contentions
25 on April 7, 2022. *See* Google LLC's Fifth Supplemental Objections and Responses to Plaintiff
26 Sonos, Inc.'s First Set of Fact Discovery Interrogatories (No. 12). As I explained in my Opening
27 Report, I reviewed Google's non-infringement contentions with respect to the '033 Patent (*id.*, pp.
28 47-51) and addressed them in my Opening Report. I note that Google provided only limited
arguments, many of which were based on a claim construction position limiting "a remote playback

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queue” to a “third-party application” that the Court recently precluded Google from advancing.

109. On November 29, 2022, I understand that Google served a supplement to its non-infringement contentions. *See* Google LLC’s Ninth Supplemental Objections and Responses to Plaintiff Sonos, Inc.’s First Set of Fact Discovery Interrogatories (No. 12). I understand that Google blamed its tardy supplementation on Sonos filing a motion for leave to amend its infringement contentions with respect to the stream transfer feature of a Hub Sender, which Google asserted advanced “new” theories of infringement. *Id.*, 59-60. I have reviewed Sonos’s supplemental contentions for the ’033 Patent and note that Google’s assertion is baseless. Regardless, Google’s 9th Supplemental response included at least the following new non-infringement positions for the ’033 Patent (*id.*, pp. 59-62):

- “Google further incorporates by reference its third supplemental response to Sonos’s Interrogatory No. 15. As explained in that response, when playing back media on the alleged ‘computing device,’ the accused YouTube application plays back a local queue stored on the computing device. Thus, even under Sonos’s interpretation of ‘remote playback queue,’ Sonos has failed to show the accused YouTube application infringes the ‘remote playback queue’ limitations that require playback of the remote playback queue on the computing device.”
 - I note that I see no basis for Google to argue that this new theory is premised on Sonos’s Hub-Sender-stream-transfer amendment.
- “Moreover, the claims recite that the detection [of limitation 1.8] must occur before transitioning from the claimed ‘first mode’ to the claimed ‘second mode.’ Sonos’s contentions do not explain how the transition from the ‘first mode’ to the ‘second mode’ occurs ‘after detecting the indication.’ For instance, crediting Sonos’s allegation that the ‘Cast-enabled display will take back over playback responsibility that was the subject of the ‘stream transfer’ if the Cast-enabled display does not receive such an indication,’ at most shows that the device will not transition from the claimed first mode to the claimed second mode. In short, Sonos has failed to present any theory establishing that the accused YouTube applications ‘detect[] an indication that playback responsibility for the remote playback queue has been successfully transferred from the computing device to the at least one given playback device,’ let alone a detection that occurs before transitioning from the first mode to the second mode.”
 - I note that I see no basis for Google to argue that this new theory is premised on Sonos’s Hub-Sender-stream-transfer amendment given that Sonos’s theory was already presented to Google before. *See, e.g.,* ’033 Supplemental Chart (redlined), p. 84 (previously referring to document “describing response to ‘ResumeSession’ message”).
 - I note that, to the extent that Google did not intend to limit this argument to Sonos’s Hub-Sender-stream-transfer infringement theory, Google would be advancing a new non-infringement argument to Sonos’s other infringement theories without any justification.
- “The accused YouTube applications do not infringe Claim 4 ... [because] [t]he accused YouTube applications do not include functionality for grouping speakers and Sonos has

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1 not shown YouTube applications have any awareness of whether a particular icon is for
2 a speaker group.”

- 3 ○ I note that I see no basis for Google to argue that this new theory is premised
4 on Sonos's Hub-Sender-stream-transfer amendment.

5 110. As I discuss below, Dr. Bhattacharjee opines on several new non-infringement
6 positions. I have set forth certain opinions in response to such positions assuming for sake of
7 argument that the Court does not strike Dr. Bhattacharjee opinions on these new non-infringement
8 positions.

9 **A. Independent Claim 1**

10 111. The language of claim 1 of the '033 Patent is set forth below with brackets
11 containing labels to help identify the claim limitations, which are referenced in my Opening Report:

12 **[1.0]** A computing device comprising:

13 **[1.1]** at least one processor;

14 **[1.2]** a non-transitory computer-readable medium; and

15 **[1.3]** program instructions stored on the non-transitory computer-readable
16 medium that, when executed by the at least one processor, cause the computing
17 device to perform functions comprising:

18 **[1.4]** operating in a first mode in which the computing device is configured
19 for playback of a remote playback queue provided by a cloud-based
20 computing system associated with a cloud-based media service;

21 **[1.5]** while operating in the first mode, displaying a representation of one
22 or more playback devices in a media playback system that are each i)
23 communicatively coupled to the computing device over a data network and
24 ii) available to accept playback responsibility for the remote playback queue;

25 **[1.6]** while displaying the representation of the one or more playback
26 devices, receiving user input indicating a selection of at least one given
27 playback device from the one or more playback devices;

28 **[1.7]** based on receiving the user input, **[1.7(a)]** transmitting an instruction
for the at least one given playback device to take over responsibility for
playback of the remote playback queue from the computing device, **[1.7(b)]**
wherein the instruction configures the at least one given playback device to
(i) communicate with the cloud-based computing system in order to obtain
data identifying a next one or more media items that are in the remote
playback queue, (ii) use the obtained data to retrieve at least one media item
in the remote playback queue from the cloud-based media service; and (iii)
play back the retrieved at least one media item;

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1. We make a WatchNext call with the video ID and/or playlist ID. The response contains the tabbed page structure and queue contents for the requested video/playlist.

2. A second WatchNext request is send by clients requesting the radio automix ('RDAMPL...' or 'RDAMVM...') for the previously requested container (or video if in the single song queue case). The response contains the autoplay preview contents that we tack on to bottom of the queue on client UIs.

So, eg when you start playback on an album and then open the queue and scroll to view your 5-song autoplay preview, you are seeing the results of two back-to-back WatchNext requests, one for the album, one for the RDAMPL mix of the album.

133. **Second**, Dr. Bhattacharjee opines that “in connection with the Patent Showdown on the ‘615 patent [I] repeatedly stated that a User Device plays back a ‘local’ queue in the non-Casting state.” Bhatta. Rebuttal Report, ¶168; *see also id.*, ¶170. This is a mischaracterization.

134. Indeed, Dr. Bhattacharjee has not cited anything from my Prior Submissions where I opined that “a User Device plays back a ‘local’ queue in the non-Casting state.” Instead, the opinions referenced by Dr. Bhattacharjee at paragraphs 168-169 of his report are consistent with my opinion that the Sender’s local queue is loaded with data identifying one or more media items from the Watch Next queue, and thus, each Sender is “configured for playback of a remote playback queue,” as recited in limitation 1.4.

135. Regardless, even assuming Dr. Bhattacharjee was correct that a Sender plays from a “local queue,” it would merely reflect that the Sender’s local queue *provides the means* for the Sender to *process* the Watch Next queue for playback, much in the same way the Receiver’s storage of a window of the current, previous, and next videoIds for playback reflects the Receiver’s *means for processing* the Watch Next queue rather than amounting to a “local playback queue,” according to Dr. Bhattacharjee and the Court.

(3) “The Cloud Queue Runs the Show”

136. As discussed before, I understand that the Court accepted Google and Dr. Bhattacharjee’s representations that a system cannot have both a “local playback queue” and a “remote playback queue”/“cloud queue” because “locally-stored information is merely a mirror reflecting a subset of what is happening in the cloud queue.” Dkt. 316, 9-10. During the Patent Showdown summary judgment hearing, for example, I understand that Google specifically

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1 represented to the Court that, in the accused products, “the phone is *not* involved in the processing
 2 of the queue or the maintenance of the queue ... [T]he queue is up here in the Cloud.” Transcript
 3 of Court Proceedings [Patent Showdown Summary Judgment Hearing] (July 13, 2022) (“Patent
 4 Showdown Hr’g Tr.”), at 63-64. In short, as explained, the Court found that “the cloud queue runs
 5 the show” in the accused YouTube systems. *Id.*, 10.

6 137. However, Dr. Bhattacharjee now opines that the evidence “confirms that in the non-
 7 Casting use case a local queue, *not* a remote queue, is played back.” Bhatta. Rebuttal Report, ¶170
 8 (emphasis original). As discussed before, Dr. Bhattacharjee’s opinion is simply not credible based
 9 on Google and Dr. Bhattacharjee’s representations to the Court. *See* Schmidt Rebuttal Report,
 10 ¶¶302-303. Once again, the “local queue” on the Sender merely provides the means for the Sender
 11 to *process* the Watch Next queue for playback. The list of media items selected for playback that
 12 is provided by the WatchNext, PLDS, and Playlist Service runs the show for the Sender’s playback.

13 138. Dr. Bhattacharjee opines “[t]hat the User Device is configured to playback the local
 14 queue—even where items loaded into that queue may have originated from a Watch Next
 15 message—is reflected by the fact that users can manipulate the queue without those changes being
 16 reflected back to the YouTube servers.” Bhatta. Rebuttal Report, ¶171. I disagree. This, at best,
 17 shows that the means by which the Sender processes the Watch Next queue for playback (i.e., the
 18 Sender’s “local queue”) includes some additional functionality. But this does not detract from the
 19 fact that the list of media items selected for playback that is provided by the WatchNext, PLDS,
 20 and Playlist Service runs the show for the Sender’s playback. Indeed, Dr. Bhattacharjee cannot
 21 dispute that the videoIds provided to the Sender by the WatchNext service dictates what the Sender
 22 plays back, regardless of whether a user manipulates a local copy of a window into the Watch Next
 23 queue.

24 139. Moreover, Dr. Bhattacharjee opines that I “appear[] to equate ‘remote playback
 25 queue’ with a storage area of a YouTube server that stores a playlist.” Bhatta. Rebuttal Report,
 26 ¶172. This is a mischaracterization. In fact, I agree with Dr. Bhattacharjee that the mere storage
 27 of a “playlist” does not amount to a “playback queue.” *See* Bhatta Rebuttal Report, ¶¶172-77.¹⁰

28 ¹⁰ As discussed above, however, Dr. Bhattacharjee’s opinion that a “playlist” is not equivalent to a
 “playback queue” directly contradicts his invalidity opinions. *Supra* ¶¶32-34.

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- 1 • “MR. VERHOEVEN [FOR GOOGLE]: Yeah. And that just shows, *in the*
2 *accused products the phone is not involved in the processing of the queue or*
3 *maintenance of the queue. The queue is maintained up here*, the phone gives
4 the instruction, and the receiver calls for the first item in the queue. *But the*
5 *queue is up here in the Cloud*. It used to be down here in the [playback] device,
6 and for a variety of technical reasons, it moved to the Cloud, just like so many
7 other things have moved to the Cloud. And so the queue used to be maintained
8 in the remote device or the speaker playback device. Sonos did it that way.
9 Google did it that way.” Id., at 63-64.
- 10 • “Indeed, the accused applications are similar to the YouTube Remote and
11 Tungsten/NexusQ prior art, with the exception that the prior art stored the
12 playback queue locally on playback device (as required by claim 13) while *the*
13 *accused applications moved the playback queue to the cloud* and thus do not
14 infringe.” Bhatta. Rebuttal Showdown Report, ¶387;
- 15 • “[A]s I discussed in my opening report, Google stored the playback queue
16 locally on its receiver devices in its prior art products. ... However, in 2013
17 *Google worked with Sonos to move the playback queue to the cloud.*” Id., ¶297;

18 Schmidt Rebuttal Report, ¶¶302, 307.

19 145. I therefore disagree with Dr. Bhattacharjee’s attempt to limit Google and Dr.
20 Bhattacharjee’s representations to the Court as applying to only the casting mode and not the non-
21 casting mode.

22 **c. Dr. Bhattacharjee’s Opinions Regarding a Hub Sender Are Flawed**

23 **(1) Dr. Bhattacharjee Improperly Attempts to Limit My Infringement Opinions**

24 146. As an initial matter, Dr. Bhattacharjee incorrectly and improperly attempts to limit
25 my infringement opinions of a Hub Sender to a scenario where “a Hub Device begin[s] playback
26 when ‘another Sender initiates a Cast session with the Hub Sender.’” Bhatta Rebuttal Report, ¶188.
27 This is nonsense.

28 147. Nowhere in my Opening Report do I limit my opinions to a specific mechanism by
which the Hub Sender begins playback. See Schmidt Op. Report, ¶178 (evidence indicating that
Hub Sender can begin playing back media while operating in the local playback mode based on
various triggers, including a voice input, another Sender initiating a Cast session, and user input at
the Hub Sender’s touchscreen display). Indeed, it would not even make sense in the context of
claim 1 of the ’033 Patent for me to have limited my opinions in this manner given that the claim

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1 is directed to capability and limitation 1.4 merely requires a “computing device” be programmed
 2 with the functional capability to “operat[e] in a first mode in which the computing device is
 3 configured for playback of a remote playback queue provided by a cloud-based computing system
 4 associated with a cloud-based media service.” In this regard, it does not require the “computing
 5 device” to be actively playing back from the “remote playback queue.” Thus, it is no surprising
 6 that Dr. Bhattacharjee cites to no paragraph in my Opening Report to support his assertion. *See*
 7 Bhatta Rebuttal Report, ¶188.

8 148. Rather, I understand that it appears Dr. Bhattacharjee is taking this approach to
 9 attempt to support Google’s damages expert’s opinions that improperly remove all of “MDx voice”
 10 from the damages pool.

11 149. As another initial matter, Dr. Bhattacharjee opines “Dr. Schmidt does not discuss
 12 the playback path for a ‘voice input’ (or any other ‘trigger’), and has not shown that a Hub Device
 13 is configured to play back a remote queue, as opposed to a local queue, when playback is initiated
 14 using a voice command.” Bhatta. Rebuttal Report, ¶188. This is a remarkable opinion by Dr.
 15 Bhattacharjee given his and Google’s repeated and vehement representations to the Court that
 16 Google’s playback devices (that include Hub Devices) have *no local playback queue at all* in
 17 connection with any of the YouTube applications. *See also, e.g.,* Bhatta. Rebuttal Report, ¶¶172
 18 (“[A]s [Dr. Bhattacharjee] showed in [his] declaration during the Patent Showdown, when Casting,
 19 a Cast-receiver may play back a cloud queue (also called a ‘Shared Queue’ or ‘Remote Queue’)
 20 implemented by the file SharedQueue.java. ‘615 Showdown Declaration, ¶¶50, 65, 73.’), 185
 21 (“[W]hen Casting the accused YouTube applications play back an ‘MDx playback queue’ (cloud
 22 queue)”). Thus, Google’s and Dr. Bhattacharjee’s own admissions confirm that a Hub Device
 23 satisfies limitation 1.4.

24 **(2) Dr. Bhattacharjee Advances a Flawed, Brand New Non-**
 25 **Infringement Position**

26 150. Dr. Bhattacharjee opines “that a Hub Device is not a ‘computing device’ operating
 27 in the claimed ‘first mode’ when a User Device is Casting to the Hub Device” and “[t]he Hub
 28 Device is a Cast receiver device and is acting as a claimed ‘playback device’ in this case.” Bhatta.
 Rebuttal Report, ¶¶187, 189-93. I disagree.

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1 remote playback queue.

2 165. Dr. Bhattacharjee repeats a similarly flawed position in connection with limitation
3 1.9. The additional explanation that I provide in connection with limitation 1.9 applies here as well.

4 *Infra* ¶¶208-230.

5 166. For at least the foregoing reasons, Dr. Bhattacharjee failed to rebut my opinion that
6 each YouTube Sender satisfies limitations 1.5 and 1.6.

7 **4. [1.7] Each YouTube Sender Is Programmed with the Capability to,**
8 **Based on Receiving the User Input, Transmit an Instruction for the at**
9 **Least One Given Receiver to Take Over Responsibility for Playback of**
10 **the Remote Playback Queue from the YouTube Sender, Where the**
11 **Instruction Configures the at Least One Given Receiver to (i), (ii), and**
12 **(iii)**

13 167. Dr. Bhattacharjee opines that I “failed to show that Limitation 1.7 is satisfied by the
14 accused User Devices and Hub Devices for several reasons.” Bhatta. Rebuttal Report, ¶197. In
15 supporting his opinion, Dr. Bhattacharjee advances *numerous* new theories not previously
16 presented by Google. While I understand that this was improper and the Court will likely strike
17 many (if not all) of Dr. Bhattacharjee’s non-infringement opinions, nothing Dr. Bhattacharjee says
18 in his Rebuttal Report changes my ultimate opinion that each YouTube Sender satisfies limitation
19 1.7.

20 **a. Dr. Bhattacharjee’s Opinions Regarding a User Device**
21 **Provisioned with a YouTube App Are Flawed**

22 **(1) Dr. Bhattacharjee’s New “The” Remote Playback Queue**
23 **Argument Is Flawed**

24 168. Dr. Bhattacharjee argues “Dr. Schmidt cannot identify the same alleged ‘remote
25 playback queue’ for Limitations 1.4 and 1.7, as required by the claim language,” purportedly
26 because:

27 With MDx, a playback device plays back a Shared Queue (also known as a “Remote
28 Queue” or “MDx queue”) during a Cast session. The Shared Queue is created only
after a Cast session is initiated. Because Limitation 1.4 is directed to playback when
not Casting, it cannot involve playback of the Shared Queue.

29 Bhatta. Rebuttal Report, ¶¶162-63 (emphasis original); *see also id.*, ¶185. Likewise, specifically
30 in connection with limitation 1.7, Dr. Bhattacharjee argues that my “opinion fails because [I have]
not shown that the accused computing devices transfer playback responsibility of “*the* remote

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1 playback queue” that [I have] accused in Limitation 1.4.” *Id.*, ¶199. I disagree.

2 169. As an initial matter, I understand that this is a new non-infringement position that
 3 Google never raised during fact discovery. *Supra* ¶109. I note Google has no justification for not
 4 bringing this flawed non-infringement position before given that Google has been aware of Sonos’s
 5 contention that a Sender transfer playback responsibility of the Watch Next queue to a Receiver
 6 since at least February 2022. I offer my response here under the assumption that the Court does
 7 not strike Dr. Bhattacharjee’s opinions on this topic.

8 170. At the core of Dr. Bhattacharjee new non-infringement position is the faulty premise
 9 that the **contents** of the claimed “remote playback queue” must be the same before and after transfer
 10 of playback responsibility. *See, e.g.*, Bhatta. Rebuttal Report, ¶¶208-209 (providing examples
 11 where the Autoplay videos in YouTube Main and YouTube Kids differed before and after Casting).
 12 In other words, in the context of the infringing YouTube system, Dr. Bhattacharjee’s new non-
 13 infringement position is incorrectly premised on the position that the claim mandates that the
 14 “remote playback queue” after Casting has the same **contents** as before Casting. Dr. Bhattacharjee
 15 is mistaken for various reasons.

16 171. **First**, the Court’s Order makes clear that the **contents** of a “playback queue” does
 17 not make something a “playback queue” but rather, the fact that the thing is “a list of multimedia
 18 content [(or one or more media items in the words of the ’033 Claims)] selected for playback”
 19 dictates whether it is a “playback queue” or not. For instance, the Court explained that a “playback
 20 queue” could contain a single media item or multiple media items. Dkt. 316, pp. 7-8. Likewise, in
 21 response to Sonos’s “assert[ion] that the content in the queue need not be selected directly by a
 22 user” to which Google argued “that a user must directly populate and manage the queue,” the Court
 23 concluded “Google’s argument does not persuade.” *Id.*

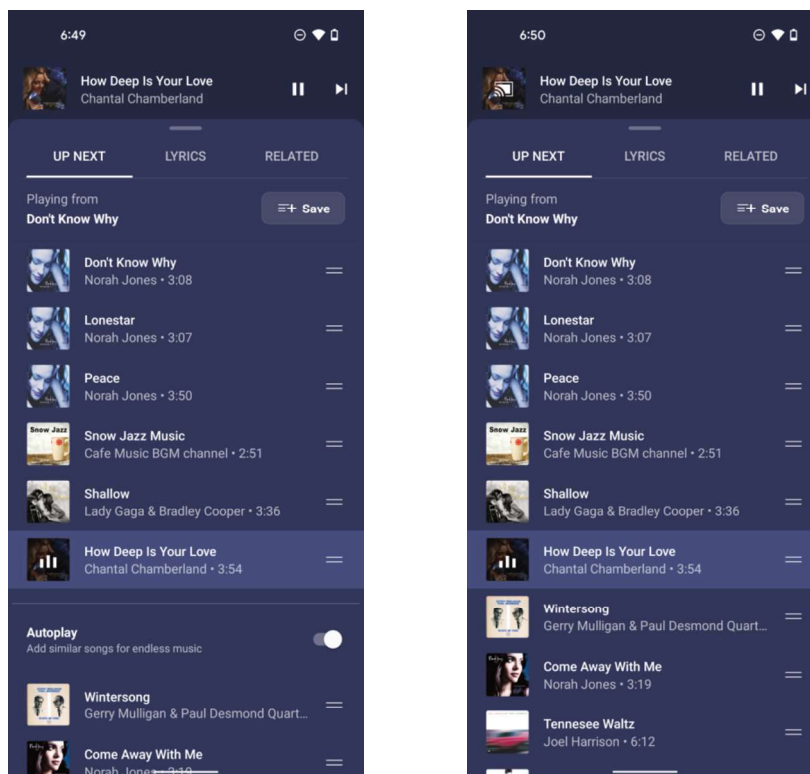
24 172. **Second**, the ’033 Patent confirms that the contents of the “remote playback queue”
 25 after playback responsibility is transferred may be different from the contents of the “remote
 26 playback queue” after transfer. For example, as I have described several times, the ’033 Patent
 27 describes an embodiment in which a user listens to music on the user’s MacBook Pro from an
 28 online media service, such as “turntable.fm or other virtual room that a user can enter to choose

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1 from a plurality of *online disc jockeys (DJs) deciding what to play next*” The user then decides
2 to play that music on the user’s “household playback system” (comprising one or more “playback
3 devices”) by selecting “[a] button or other indicator ... added to the turntable.fm Web application”
4 that “switch[es] the content being played to the playback system for output (e.g., to the Sonos™
5 system rather than ... the Mac Book™).” ’033 Patent, 12:65-13:11. Of course, in this example
6 given that the online service is controlling the content in the “remote playback queue,” the content
7 of that queue may be different when the user is listening through the MacBook Pro versus when
8 the user transfers playback to the “household playback system.”

9 173. Thus, that Dr. Bhattacharjee can identify some instances where the contents of the
10 Watch Next queue before Casting might be different after Casting is a sideshow. Notably, Dr.
11 Bhattacharjee cannot dispute the fact that the contents of the Watch Next queue can be same before
12 and after Casting YouTube Main.

13 174. It is also worth noting that Dr. Bhattacharjee cannot dispute that the content of the
14 list of media items that are for playback by the Receiver after Casting YouTube Music is the same
15 as the content of the list of media items that was previously for playback by the Sender when the
16 “autoplay” feature is enabled.

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175. Dr. Bhattacharjee also takes issue with the fact that the MDx session server manages a copy of the Watch Next queue apparently because “a ‘copy of the Watch Next queue’ is necessarily different than the original ‘Watch Next queue.’” Bhatta. Rebuttal Report, ¶204. In this respect, Dr. Bhattacharjee appears to be arguing that the claimed “remote playback queue” cannot move, or in other words, where the “remote playback queue” is maintained in data storage in the “cloud-based computing system” must be fixed. I disagree with this, yet additional, new non-infringement position.

176. The claims require that the “remote playback queue” is provided by the same “cloud-based computing system associated with the cloud-based media service” before and after the transfer, but they do not otherwise say that the “remote playback queue” must be fixed at one data storage location within that “cloud-based computing system” or that it cannot otherwise move.

177. In the accused system, before Casting, the list of media items selected for playback by the Sender that runs the show is provided by the YouTube cloud infrastructure and specifically, by the WatchNext, PLDS, and Playlist Service with storage via the Playlist Service. *Supra* ¶¶46-52. Likewise, after Casting, the list of media items selected for playback by the Receiver that runs

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the show is also provided by the YouTube cloud infrastructure and also specifically, by the WatchNext, PLDS, and Playlist Service with storage via the Playlist Service, although the MDx session server facilitates management of the list. *Supra* ¶¶60-63. In both cases, the WatchNext Service provides one or more videoIds of media items that the Sender or Receiver is to playback next, which are from the list of one or more media items selected for playback that is stored in the YouTube cloud infrastructure. Likewise, in both cases, the next videoIds from the list stored in the YouTube cloud infrastructure ultimately controls the Sender's or Receiver's playback.

178. Thus, there is nothing in Dr. Bhattacharjee's Rebuttal Report that changes my opinion that a user device provisioned with a YouTube app literally satisfies limitation 1.7 (and limitation 1.4).

179. However, even assuming *arguendo* that some or all of Dr. Bhattacharjee's new claim construction requirements and/or non-infringement positions were correct (they are not), it is my opinion that a user device provisioned with a YouTube app would still satisfy limitation 1.7 (and limitation 1.4) under the Doctrine of Equivalents.

180. **First**, this is because, in my opinion, there is an insubstantial difference between (i) the **contents** of a list of one or more media items selected for playback being the same before and after transfer and (ii) the **contents** of a list of one or more media items selected for playback being different after transfer as compared to before transfer.

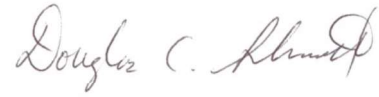
181. In fact, the Sender performs the same function (e.g., operating in a first mode in which it is configured for playback of a list of one or more media items selected for playback provided by the YouTube cloud infrastructure), in the same way (e.g., by interacting with the YouTube cloud infrastructure providing the list of one or more media items selected for playback), to achieve the same result (e.g., playing back media items from the list of one or more media items selected for playback provided by the YouTube cloud infrastructure) irrespective of whether the **contents** of the list provided by the YouTube cloud infrastructure is the same or different before and after Casting.

182. Likewise, the Receiver performs the same function (e.g., obtaining from the WatchNext service of the YouTube cloud infrastructure a videoId of a next media item in the list

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Dated: January 23, 2023



DOUGLAS C. SCHMIDT